

## CS 3361 - Spring, 2007

### Concepts of Programming Languages

**Text:** *A Concise Introduction to Computer Languages*, by D. Cooke

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**Course Forum:** <http://www.webct.ttu.edu>

#### Course Description

The intent of this course is to introduce the student to the variety of programming languages environments that currently exist. To do so, the student is introduced with formal approaches to language design: both syntactically and semantically.

Representative languages from each class of languages will be used as a basis for discussion and comparison. The student will learn how to learn a language based on the similarities and differences, which exist between languages. Furthermore, the student will learn the strengths of each class of languages with respect to intended applications.

#### Topics:

- Overview of Languages -- motivations for language changes
- Methods of syntax description
- Denotational Semantics
- Modularity of Languages
- Recursion
- Concurrency
- Information Hiding
- Logic Programming
- Functional Programming
- Procedural Programming
- Object Oriented Programming

#### Course Outcomes. Students who pass the course shall be able to:

1. Derive sentences according to a BNF grammar (1,3)
2. Construct a BNF Grammar (1,2,3)
3. Derive the meaning of a program based upon denotational semantic definitions (1,3)
4. Construct denotational semantic definitions (1,3)
5. Construct a simple recursive-decent interpreter (1,2)
6. Build a simple virtual machine (1,2)
7. Identify the fundamental constructs of programming languages and with which languages they became “fixed.” (3)
8. Solve simple problems in other programming paradigms – functional and logical. (3,5)
9. Understand a program proof. (3,4)

**Method of Assessment of Learning Outcomes:**

- Two graded noncumulative exams.
- Three graded programming assignments.
- Self-graded assignments – self-assessments.
- Student evaluation of course learning outcomes.
- Comprehensive final

**Participation:**

Students are expected to participate actively in class. Participation includes asking questions, answering instructor's and other students' questions, as well as initiating discussion.

**Grading Policy**

Participation	5%
Programming Assignments	20%
Exam 1	20%
Exam 2	20%
Final Exam	35%

The grading scale used is: 90-100 A, 80-89 B, 70-79 C, 60-69 D, 0-59 F.

Late work will only be accepted within 24 hours of the due date and will be graded on a 90% basis.

Deadlines will not be extended due to system failures or disk crashes. Please always back up work.

Questions on graded material will be handled on a case-by-case basis and may result in the entire material being re-graded either higher or lower.

**Attendance Policy**

Attendance is required at all class sessions. You are responsible for any announcements made, assignments given, assignment deadlines, and lecture material covered during class sessions whether or not you are there. The class must continue regardless of students' work obligations, other classes, out of town trips, etc.

The course instructor must be notified in writing preferably one week before or, at the latest, within 24 hours of any absence in order to make appropriate plans with the student for making up missed course material. Early notification is requested for religious observances or officially approved trips. Each absence will be handled on a case-by-case basis, but if the student is habitually absent for any reason or is absent due to such reasons as oversleeping or neglecting to give prior notice when possible, the student will be penalized at a minimum by grading the missed material on a 90% basis or at a maximum by not allowing the missed material to be made up.

**Civility in the classroom**

The Texas Tech University Catalog states: Students are expected to assist in maintaining a classroom environment that is conducive to learning.

In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any other form of distraction, such as reading newspapers, working on other classes, taking cell phone calls, and working on laptop computers. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class.

# **Statement of Academic Conduct for Engineering Students, College of Engineering Texas Tech University**

## **Preamble**

The College's primary goal is to educate students to fill leadership roles as professionals aware of technology and its economic and political role in the world. Therefore, we strive to produce technically competent graduates who solve problems, are able to communicate and work well with others; are sensitive to the needs of society, are well-educated in the humanities as well as in the engineering disciplines, and maintain a high-level of ethical and professional conduct.

## **Policy**

The College of Engineering fully subscribes to the Code of Student Conduct as published in the Texas Tech University's "Student Affairs Handbook." The Handbook states the following:

"The University is strongly committed to upholding standards of academic integrity. These standards require that students never present the work of others as their own.

Any student found to have committed the following academic misconduct is subject to the disciplinary sanctions outlined in Part IX, Section D "Disciplinary Sanctions":

### **1. Cheating**

This violation includes, but is not limited to: (1) use of any unauthorized assistance or assisting others in taking quizzes, tests, or examinations; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignment(s); (3) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff; (4) alteration of grade records; (5) bribing or attempting to bribe a faculty member to alter a grade.

### **2. Plagiarism**

This violation includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also included the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

### **3. Instructor Responsibilities**

The instructor in a course is responsible for initiating action in cases where there is an admitted act or convincing evidence of academic misconduct. Before taking such action, the instructor should attempt to discuss the matter with the student(s). If the suspected misconduct involved a final exam, the instructor should submit a grade of X until a reasonable attempt can be made to contact the student(s), after the end of the semester.

### **4. Instructor Sanctions**

If academic misconduct is determined by the instructor, a failing grade shall be assigned to either the assignment in question or to the course grade. When a student is given a failing grade in a course as a result of academic misconduct, the instructor shall report in writing to the instructor's department chairperson the facts of the case and the action to be taken against the student. The chairperson shall provide a copy to the student, to his or her Academic Dean and to the Dean of Students Office.

### **5. Grade Appeal Procedure**

The Grade Appeal Procedure (Part V, Section A) may be used to appeal a failing course grade, but not a failing grade given for a class assignment. The disciplinary penalty or grade of F shall not be implemented until the disciplinary procedures or grade appeal process has been exhausted. A student may continue the academic class and course work until a final decision is made."

### **6. Repeated Academic Dishonesty**

In cases of repeated violations, either the instructor (through his or her department chairperson and/or Academic Dean's Office) or the Academic Dean may refer the case to the Dean of Students Office for further disciplinary action.